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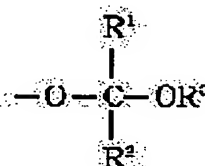
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## (54) BASE RESIN FOR POSITIVE RESIST

## (57)Abstract:

**PROBLEM TO BE SOLVED:** To obtain a base resin for a positive resist having high sensitivity and high resolution, excellent in focal depth-width characteristics, shape secular change stability after exposure and the shelf stability of a resist solution and capable of forming a resist pattern excellent in profile shape by using a polyhydroxystyrene having a specified weight average molecular weight and a specified molecular weight distribution.

**SOLUTION:** The base resin for a positive resist comprises a polyhydroxystyrene having residues of the formula substituted for 10-60 mol% of hydroxyl groups and having a weight average molecular weight of 8,000-25,000 and a molecular weight distribution (Mw/Mn) of  $\leq 1.5$ . In the formula, R<sup>1</sup> is H or methyl, R<sup>2</sup> is methyl or ethyl and R<sup>3</sup> is 1-4C lower alkyl. In the case of <10 mol% substitution rate, a pattern excellent in shape is not obtained. In the case of >60 mol%, the sensitivity of the resist lowers. The substituents are preferably 1-ethoxyethoxy and 1-methoxy-n-propoxy groups because these groups enhance sensitivity and resolving power in a well-balanced state.



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